

NOTE ON EXCISION OF THE KNEE JOINT.¹

BY

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The knee-joint, the most complicated anatomically in the human system, has been subjected to excision, chiefly for three conditions

1st. Chronic disease of the articulation.

2nd. Ankylosis, whether fibrous or bony.

3rd. Compound fracture or dislocation.

The first excision of the "knee-joint" successfully, was performed by Filkin of Norwich, in 1762, and again by Park, in 1781, 40 years ago, it has been performed in all less than 25 times, owing chiefly to its receiving but little favour. This operation has been very considerably revived by Textor of Germany, and the late Sir Wm. Ferguson, of London. The first excision of this joint in the United States, 1856 was performed by Dr. Kinloch of Charleston; and in March, 1865, in the Protestant Hospital, by myself, this being one of the first knee excisions in Canada.² The term excision has quite a different signification now, from what it had thirty years ago. Then it meant somewhat free removal of much of the structures essential to the functions of the articulation. At present it means, in many cases, very partial interference with the structures essential to the joint, while it aims in every case, at the complete removal of the diseased tissues. To dig out sequestra from the surfaces of bones, and scrape the latter, and thus not shorten the limb, is the order of the day. Quite a change from former times, when the ends of the bones would be sawn off, in order to coapt parts and form a mechanical joint without much consideration as to future usefulness. Such, however, was more the result of a want of knowledge of our present advanced pathology than otherwise. The term "arthrectomy" was for a time spoken of as meaning partial excision of the joint, where the diseased synovial membrane is chiefly or solely removed and "excision" to removal of the ends of the bones completely. These terms arthrectomy and excision so overlap each other, and fail to define the exact meaning, that the terms partial and complete excision are now generally adopted, and chiefly owing to the fact that it is exceedingly rare to meet with a case of knee-joint disease in which the whole of the synovial membrane requires extirpation and yet none of the bone.

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² Reported in Medical Times and Gazette, London, Eng., March 18, 1865.

and vice versa, it is just as rare to meet with a case requiring the free removal of the ends of the bones, and not calling for the removal of the synovial structures. To-day complete excision of the knee-joint is a novelty, that is, opening the joint, sawing off the ends, and co-apting the parts as in the days of Professor Geo. Fenwick, of McGill, whose name is handed down as one of the most celebrated surgeons Canada has produced. Why these changes or modifications as to treatment of such cases? First, the more accurate recognition of the vast importance of early and vigorous treatment of tuberculous disease, has arrested much, which formerly progressed to complete destruction of the ends of both the tibia and femur; and on the other hand, when operation is decided upon, it is at a stage when disease of the bones can be removed without complete excision of the ends, although the bone tissue is conserved as much as possible, the removal of the synovial tissue is now particularly free. In fact, Treves states it is not an uncommon procedure to dissect out the entire synovial membrane, whether visibly affected or not. In general terms, in a case of tuberculous joint, the first principle is to remove all tissues in which we believe the bacilli are deposited and to spare all structures, except the synovial membrane, not charged with the tubercle bacillus. It must be admitted that this is after all, a complex problem, not only in theory, but also in practice. In adults exsection is truly the shortest and safest way of eliminating the tedious morbid process and substituting ankylosis for a comparatively useless joint. To adult cases, orthopaedic treatment is rarely applicable, while in children, mechanical and general treatment frequently are attended with the most practical results. In the child, the growth of the thigh and tibia, depends so much on the epiphyses adjoining the knee, that exsection is liable to be followed by very considerable shortening, and consequently is to be avoided as much as possible. The antiseptic treatment in such operations, as defined by Gerster, requires no comment. To be truly progressive is to be truly antiseptic in treatment, the results of which certainly mark the present as a progressive era in surgery. In the older operations on the knee-joint, in which an absolutely stiff knee was the object in view, it was not looked upon as important, whether the ligamentum patellæ was divided or not, in such a case the action of the extensor muscles not being considered. More recent operations, however, tend to the preservation intact of the ligamentum patellæ, in order to preserve, as far as possible, some of the movements. Treves recommends that if the patellar ligament has been divided, it should be stitched together again with silk, which remains buried. He considers it better not to include the capsule.

the joint in the stitches which unite the skin wound, as the skin is liable to be dragged in and the edges displaced, thus interfering with primary union. It is also important that the edges of the capsule and the fibrous expansion of the muscle should not be united, as any effusion into the joint cavity after the operation would thus not be pent up, but escape into the areolar tissue around and become more rapidly absorbed, and should even any pus be formed, it would be more easily evacuated. Sayre, in his recent work on "Joint Diseases," states as his opinion that exsection of the knee-joint is attended with considerable danger, and in many instances you may justly hesitate before resorting to the operation. Mr. Bryant, in a lecture at Guy's Hospital, published in the *Lancet*, "On the least sacrifice of parts as a principle in operative surgery," states: "I trust that this series of cases is enough to demonstrate with sufficient clearness, the value of the practice I am now inculcating, and to show that in a large number of cases of disease of the joints, a cure may be secured by a simple incision into the affected joint and the removal of the necrosed bone. The series includes examples of disease of the shoulder and elbow, hip, knee and ankle and great toe joints, and I do not think I should be far wrong if I were to express my belief that in many cases, if not in all, many surgeons, more particularly those who are advocates for excision, would have excised the joints, and some few, would have amputated. In the treatment I am now advocating, the surgical proceedings are simple and are attended with a minimum of danger. The success of the practice I have recorded was great." The opinion of Mr. Bryant is one founded on large practical experience and is certainly worthy of the fullest consideration, when such trying cases present for surgical interference and treatment.